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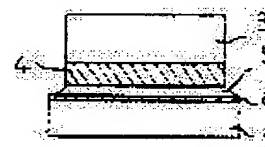
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## (54) CONDUCTOR MATERIAL

## (57)Abstract:

**PURPOSE:** To relax thermal stresses in joining ceramic to metal by making a composite body with glass or glass ceramic containing essential constituents of oxide of copper,  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$  and with a conductor.

**CONSTITUTION:** A mixture of 15W40% of glass powder of mean particle diameter of  $1\mu\text{m}$  selected to constitute a total amount of 100% with 55W65% of  $\text{SiO}_2$ , 10W20% of  $\text{Al}_2\text{O}_3$  and 15W25% of  $\text{Cu}_2\text{O}$  as a fundamental composition and of 85W60% of Cu powder of mean particle diameter of  $0.5\mu\text{m}$  is sintered in  $\text{N}_2$  at  $700\text{W}1000^\circ\text{C}$  to make a plate. When joining Cu to  $\text{Al}_2\text{O}_3$  or  $\text{SiC}$ , the plate is used as a thermal stress relaxation member in a structure sandwiching the plate between the metal and ceramic. Since the plate of sintered body can be made to have a coefficient of thermal expansion of  $35\text{W}120 \times 10^{-7}/^\circ\text{C}$ , the plate is useful as a thermal stress relaxation member between electronic components and structural materials to improve the reliability of the electronic components and structural materials.



## LEGAL STATUS

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